

REMARKS/ARGUMENTS

Attached hereto is a marked up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version With Markings to Show Changes Made."**

Prior to the present amendment, Claims 3-5, 7-12, 16-19 and 22-31 were pending in the present application. After the foregoing amendment, Claims 3-5, 7-12, 16-19 and 22-34 are active in the present application. Claims 3, 7, 16, and 17 have been amended. New Claims 31-34 have been added. Support for the amendment and new claims is found, at least, at page 14, lines 3-30 and Fig. 7 of the present specification. Accordingly, no new matter has been added by the amendment. Applicants note with appreciation that Claims 8-12 and 22-29 are allowed.

The Examiner rejected Claims 3, 7, 16 and 17 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicants have amended Claims 3, 7, 16 and 17, to further clarify that the light collector illuminates the rear surface of the liquid crystal display panel. Accordingly, Applicants submit that the rejection under 35 U.S.C. § 112 has been overcome.

Claims 3-5, 7, 16-19 and 30-31 stand rejected as being unpatentable over Applicant Admitted Prior Art (APA) in view of Helms (U.S. Patent No. 5,952,922) in view of Kubo et al. (U.S. Patent No. 6,195,140). Applicants respectfully traverse this rejection.

Helms discloses a photodetector (14) which is disposed on the lid portion (13) of the PC (10). This photodetector (14), as described at column 3, lines 3-7, is disposed on the same side of the lid portion (13) proximate the LCD (12). In contrast, the light receiving device of the present invention as required by each of the rejected independent claims, is formed on one of the first and second

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substrates between the first and second substrates. Such a configuration, is neither disclosed by APA, Helms, nor Kubo et al. (see Fig. 7) alone, or in combination. Accordingly, Applicants submit the present invention of independent Claims 3, 7, 16 and 17 and their dependent claims is not obvious by the cited references.

Applicants have added new Claims 32-34. Applicants submit that the new claims are allowable for at least the same reasons as described above with respect to Claims 3, 7, 16 and 17. No new matter has been added by the new claims.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

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3. (Trice Amended) A liquid crystal display apparatus comprising:

a liquid crystal display panel having a predetermined display characteristic;

a luminescent unit located adjacent to the liquid crystal display panel, wherein the luminescent unit includes a light collector, which collects ambient light, and a light source, wherein  
5 the collected ambient light is used as a backlight of the liquid crystal display panel;

a light receiving device substantially countering an optical path of the ambient light collected by the light collector, [and illuminating] wherein the light collector illuminates the rear surface of the liquid crystal display panel, [to detect] and the light receiving device detects the amount of collected ambient light; and

10 a control circuit electrically connected to the liquid crystal display panel and the light receiving device, wherein the control circuit varies the predetermined display characteristic in accordance with the amount of the detected ambient light, wherein the predetermined display characteristic includes transmittance, the control circuit changing a minimum transmittance in accordance with the amount of collected ambient light, and wherein the liquid crystal display panel  
15 includes electrodes to which a voltage of a predetermined range is applied, wherein the control circuit shifts the predetermined voltage range in accordance with the amount of collected ambient light to thereby change the minimum transmittance, wherein the liquid crystal display panel includes:

first and second substrates opposing to each other;

a liquid crystal layer arranged between the first and second substrates; and

a sealed portion for sealing the liquid crystal layer and defining a peripheral area and a display area of the liquid crystal display panel, wherein the light receiving device is formed on one of the facing surfaces of the first and second substrates in the peripheral area and is formed between the first and second substrates.

7. (Thrice Amended) A liquid crystal display apparatus comprising:

a liquid crystal display panel having a predetermined display characteristic;

a luminescent unit located adjacent to the liquid crystal display panel, wherein the luminescent unit includes a light collector, which collects ambient light, and a light source, wherein  
5 the collected ambient light is used as a backlight of the liquid crystal display panel;

a light receiving device substantially countering an optical path of the ambient light collected by the light collector, [and illuminating] wherein the light collector illuminates the rear surface of the liquid crystal display panel, [to detect] and the light receiving device detects the amount of collected ambient light; and

10 a control circuit electrically connected to the liquid crystal display panel and the light receiving device, wherein the control circuit varies the predetermined display characteristic in accordance with the amount of the detected ambient light, wherein the predetermine display characteristic includes contrast ratio, the control circuit adjusting the contrast ratio of the liquid crystal display panel in accordance with the amount of collected ambient light, and wherein the  
15 liquid crystal display panel includes electrodes to which a voltage of a predetermined range is applied, and wherein the control circuit narrows the predetermined voltage range in order to decrease

the contrast ratio when the amount of collected ambient light is equal to or greater than a predetermined value, wherein the liquid crystal display panel includes:

first and second substrates opposing to each other;

a liquid crystal layer arranged between the first and second substrates; and

5      a sealed portion for sealing the liquid crystal layer and defining a peripheral area and a display area of the liquid crystal display panel, wherein the light receiving device is formed on one of the facing surfaces of the first and second substrates in the peripheral area and is formed between the first and second substrates.

16. (Thrice Amended) A liquid crystal display apparatus comprising:

a liquid crystal display panel having a predetermined display characteristic;

a luminescent unit arranged adjacent to the liquid crystal display panel for providing light to the display panel to illuminate the display panel, wherein the luminescent unit includes a light collector, which collects ambient light, and a light source, wherein the collected ambient light is used as a backlight of the liquid crystal display panel;

5      a light receiving device substantially countering an optical path of the ambient light collected by the light collector, [and illuminating] wherein the light collector illuminates the rear surface of the liquid crystal display panel, [to generate] and the light receiving device generates a light amount signal corresponding to the amount of collected ambient light; and

10      a control circuit electrically connected to the liquid crystal display panel and the light receiving device, wherein the control circuit varies the predetermined display characteristic in accordance with the light amount signal, wherein the liquid crystal display panel includes:

first and second substrates opposing to each other;

a liquid crystal layer arranged between the first and second substrates; and

a sealed portion for sealing the liquid crystal layer and defining a peripheral area and a display area of the liquid crystal display panel, wherein the light receiving device is formed on one of the facing surfaces of the first and second substrates in the peripheral area and is arranged [at the side of the liquid crystal display panel] between the first and second substrates.

17. (Thrice Amended) A liquid crystal display apparatus comprising:

a liquid crystal display panel having a predetermined display characteristic;

a luminescent unit arranged adjacent to the liquid crystal display panel for providing light to the display panel to illuminate the display panel, wherein the luminescent unit includes a light collector, which collects ambient light, and a light source, wherein the collected ambient light is used as a backlight of the liquid crystal display panel;

a light receiving device substantially countering an optical path of the ambient light collected by the light collector, [and illuminating] wherein the light collector illuminates the rear surface of the liquid crystal display panel, [to generate] and the light receiving device generates a light amount signal corresponding to the amount of collected ambient light; and

a control circuit electrically connected to the liquid crystal display panel and the light receiving device, wherein the control circuit varies the predetermined display characteristic in accordance with the light amount signal, wherein the liquid crystal display panel includes a pair of substrates, and wherein the light receiving device is arranged facing the luminescent unit on one of

the substrates and adjacent to the display area of the liquid crystal display panel, wherein the liquid crystal display panel includes:

first and second substrates opposing to each other;

a liquid crystal layer arranged between the first and second substrates; and

5        a sealed portion for sealing the liquid crystal layer and defining a peripheral area and a display area of the liquid crystal display panel, wherein the light receiving device is formed on one of the facing surfaces of the first and second substrates in the peripheral area and is formed between the first and second substrates.

32. (New) A liquid display apparatus comprising:

a liquid crystal display panel having a predetermined display characteristic, wherein the liquid crystal display panel includes,

first and second substrates opposing to each other,

5        and

a liquid crystal layer arranged between the first and second substrates;

a light receiving device which is formed on one of the first and second substrates between the first and second substrates and generates a light amount signal; and

10        a control circuit electrically connected to the liquid crystal display panel and the light receiving device, wherein the control circuit varies the predetermined display characteristic in accordance with the light amount signal.

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33. (New) The apparatus according to Claim 32, wherein the liquid crystal display panel includes thin film transistors arranged on one of the first and second substrates, and wherein the light receiving device is arranged on the same substrate as the thin film transistors.

34. (New) The apparatus according to Claim 32, wherein the liquid crystal display panel includes thin film transistors arranged on one of the first and second substrates, and wherein the light receiving device is selected to be formed by a same manufacturing process as the thin film transistors.